

ASSIGNMENT

WHEREAS, WE, David J. Mooney, residing at Ann Arbor, Michigan; Byung-Soo Kim, residing at Chestnut Hill, Massachusetts; and Andrea N. Brown, residing at Indianapolis, Indiana, have invented certain new and useful improvements in and to the subject matter of:

HYBRID TISSUES FOR TISSUE ENGINEERING

described in an application for United States Letters Patent filed on May 17, 2000 and accorded Application No. 09/572,786 which is a continuation of International Patent Application No. PCT/US98/24409 filed November 17, 1998 which is based on U.S. Provisional Patent Application No. 60/066,926 filed November 17, 1997;

AND, WHEREAS, The Regents of The University of Michigan, having a place of business located at Wolverine Tower, Room 2071, 3003 South State Street, Ann Arbor, Michigan 48109-1280 (hereinafter "ASSIGNEE"), is desirous of acquiring certain rights to the improvements and under the application;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) or the equivalent thereof, and other good and valuable consideration, receipt of which is hereby acknowledged, we do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, our entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said improvements, said United States application, any other United States applications, including provisional, divisional, renewal, substitute, continuation, reexamination and reissue applications, based in whole or in part on said United States application or in whole or in part on said improvements, any foreign applications, including international and regional applications, based in whole or in part on any of the aforesaid United States applications or in whole or in part on said improvements, and in and to any and all letters patent, including extensions thereof, of any country which have been or may be granted on any of the aforesaid applications or on said improvements or any parts thereof;

AND WE hereby authorize and request our attorneys, Brobeck, Phleger & Harrison LLP, whose address is 1333 H Street, N.W., Suite 800, Washington, DC 20005, to insert hereon any identification necessary or desirable for recordation of this document, including the filing date and application number of said application when known.

AND WE hereby agree for ourselves and our heirs, executors and administrators to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to ASSIGNEE its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND WE hereby covenant for ourselves and our legal representatives, and agree with said ASSIGNEE, its successors and assigns, that we have granted no right or license to make, use, sell or offer to sell said improvements, to anyone except said ASSIGNEE, that prior to the execution of this deed, our right, title and interest in said improvements had not been otherwise encumbered, and that we have not and will not execute any instrument in conflict therewith;

AND WE do hereby authorize and request the United States Commissioner for Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said ASSIGNEE.

IN WITNESS WHEREOF, we have hereunto set our hands and seals.

Nov 5, 2000
Date

David J. Mooney
David J. Mooney

County of Washington)
) ss:
State of Michigan)

On this 3rd day of November, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared David J. Mooney, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

David J. Mooney
Notary Public

(SEAL)

My Commission Expires 11-18-01

Date

Byung-Soo Kim

County of _____)
) ss:
State of _____)

On this _____ day of _____, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared Byung-Soo Kim, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

Notary Public

(SEAL)

My Commission Expires _____

ASSIGNMENT

WHEREAS, WE, David J. Mooney, residing at Ann Arbor, Michigan; Byung-Soo Kim, residing at Chestnut Hill, Massachusetts; and Andrea N. Brown, residing at Indianapolis, Indiana, have invented certain new and useful improvements in and to the subject matter of:

HYBRID TISSUES FOR TISSUE ENGINEERING

described in an application for United States Letters Patent filed on May 17, 2000 and accorded Application No. 09/572,786 which is a continuation of International Patent Application No. PCT/US98/24409 filed November 17, 1998 which is based on U.S. Provisional Patent Application No. 60/066,926 filed November 17, 1997;

AND, WHEREAS, The Regents of The University of Michigan, having a place of business located at Wolverine Tower, Room 2071, 3003 South State Street, Ann Arbor, Michigan 48109-1280 (hereinafter "ASSIGNEE"), is desirous of acquiring certain rights to the improvements and under the application;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) or the equivalent thereof, and other good and valuable consideration, receipt of which is hereby acknowledged, we do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, our entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said improvements, said United States application, any other United States applications, including provisional, divisional, renewal, substitute, continuation, reexamination and reissue applications, based in whole or in part on said United States application or in whole or in part on said improvements, any foreign applications, including international and regional applications, based in whole or in part on any of the aforesaid United States applications or in whole or in part on said improvements, and in and to any and all letters patent, including extensions thereof, of any country which have been or may be granted on any of the aforesaid applications or on said improvements or any parts thereof;

AND WE hereby authorize and request our attorneys, Brobeck, Phleger & Harrison LLP, whose address is 1333 H Street, N.W., Suite 800, Washington, DC 20005, to insert hereon any identification necessary or desirable for recordation of this document, including the filing date and application number of said application when known.

AND WE hereby agree for ourselves and our heirs, executors and administrators to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to ASSIGNEE its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND WE hereby covenant for ourselves and our legal representatives, and agree with said ASSIGNEE, its successors and assigns, that we have granted no right or license to make, use, sell or offer to sell said improvements, to anyone except said ASSIGNEE, that prior to the execution of this deed, our right, title and interest in said improvements had not been otherwise encumbered, and that we have not and will not execute any instrument in conflict therewith;

AND WE do hereby authorize and request the United States Commissioner for Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said ASSIGNEE.

IN WITNESS WHEREOF, we have hereunto set our hands and seals.

Date

David J. Mooney

County of _____)

) ss:

State of _____)

On this _____ day of _____, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared David J. Mooney, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

(SEAL)

Notary Public

My Commission Expires _____

11/8/00
Date

Byung-Soo Kim
Byung-Soo Kim

County of Suffolk)

) ss:

State of Massachusetts)

On this 8 day of Nov, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared Byung-Soo Kim, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

(SEAL)

Charlotte H. H.
Notary Public

My Commission Expires _____

11/11/00
Date

Andrea N. Brown
Andrea N. Brown

County of Marion)
State of Indiana) ss:

On this 1st day of November, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared Andrea N. Brown, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

(SEAL)

Jo Ellen Hamilton
Notary Public

My Commission Expires 4/3/2007

ASSIGNMENT

WHEREAS, I, Craig R. Halberstadt, residing at Charlotte, Mecklenburg County, North Carolina, have invented certain new and useful improvements in and to the subject matter of:

HYBRID TISSUES FOR TISSUE ENGINEERING

described in an application for United States Letters Patent filed on May 17, 2000 and accorded Application No. 09/572,786 which is a continuation of International Patent Application No. PCT/US98/24409 filed November 17, 1998 which is based on U.S. Provisional Patent Application No. 60/066,926 filed November 17, 1997;

AND, WHEREAS, Charlotte-Mecklenburg Hospital Authority d/b/a Carolinas Medical Center, a body corporate and politic established under the North Carolina Hospital Authority Act having a principal place of business at Charlotte, Mecklenburg County, North Carolina (hereinafter "ASSIGNEE"), is desirous of acquiring certain rights thereunder;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) or the equivalent thereof, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, my entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said improvements, said United States application, any other United States applications, including provisional, divisional, renewal, substitute, continuation, reexamination and reissue applications, based in whole or in part on said United States application or in whole or in part on said improvements, any foreign applications, including international and regional applications, based in whole or in part on any of the aforesaid United States applications or in whole or in part on said improvements, and in and to any and all letters patent, including extensions thereof, of any country which have been or may be granted on any of the aforesaid applications or on said improvements or any parts thereof;

AND I hereby authorize and request my attorneys, Baker Botts L.L.P., whose address is The Warner, Suite 1300, 1299 Pennsylvania Avenue, N.W., Washington, D.C. 20004-2400, to insert hereon any further identification necessary or desirable for recordation of this document, including the filing date and application number of said application when known;

AND I hereby agree for myself and my heirs, executors and administrators to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to ASSIGNEE its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND I hereby covenant for myself and my legal representatives, and agree with said ASSIGNEE, its successors and assigns, that I have granted no right or license to make, use,

sell or offer to sell said improvements, to anyone except said ASSIGNEE, that prior to the execution of this deed, my right, title and interest in said improvements had not been otherwise encumbered, and that I have not and will not execute any instrument in conflict therewith;

AND I do hereby authorize and request the United States Commissioner for Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said ASSIGNEE.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

X 8/24/00
Date

X Craig R. Halberstadt
Craig R. Halberstadt

County of Mecklenburg)
) ss:
State of North Carolina)

On this X 24 day of X August, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared Craig R. Halberstadt, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

X Jay E. Scott
Notary Public

(SEAL)

My Commission Expires X 4/24/2005

ASSIGNMENT

WHEREAS, I, Charles A. Vacanti, residing in Lexington, Massachusetts, have invented certain new and useful improvements in and to the subject matter of:

HYBRID TISSUES FOR TISSUE ENGINEERING

described in an application for United States Letters Patent filed on May 17, 2000 and accorded Application No. 09/572,786 which is a continuation of International Patent Application No. PCT/US98/24409 filed November 17, 1998 which is based on U.S. Provisional Patent Application No. 60/066,926 filed November 17, 1997;

AND, WHEREAS, The University of Massachusetts Medical Center having a place of business at 55 Lake Avenue North, Worcester, Massachusetts 01655 (hereinafter "ASSIGNEE"), is desirous of acquiring certain rights thereunder;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) or the equivalent thereof, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, my entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said improvements, said United States application, any other United States applications, including provisional, divisional, renewal, substitute, continuation, reexamination and reissue applications, based in whole or in part on said United States application or in whole or in part on said improvements, any foreign applications, including international and regional applications, based in whole or in part on any of the aforesaid United States applications or in whole or in part on said improvements, and in and to any and all letters patent, including extensions thereof, of any country which have been or may be granted on any of the aforesaid applications or on said improvements or any parts thereof;

AND I hereby authorize and request my attorneys, Baker Botts L.L.P., whose address is The Warner, Suite 1300, 1299 Pennsylvania Avenue, N.W., Washington, D.C. 20004-2400, to insert hereon any further identification necessary or desirable for recordation of this document, including the filing date and application number of said application when known;

AND I hereby agree for myself and my heirs, executors and administrators to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to ASSIGNEE its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND I hereby covenant for myself and my legal representatives, and agree with said ASSIGNEE, its successors and assigns, that I have granted no right or license to make, use, sell or offer to sell said improvements, to anyone except said ASSIGNEE, that prior to the

execution of this deed, my right, title and interest in said improvements had not been otherwise encumbered, and that I have not and will not execute any instrument in conflict therewith;

AND I do hereby authorize and request the United States Commissioner for Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said ASSIGNEE.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

8/24/00
Date

Charles A. Vacanti
Charles A. Vacanti

County of Worcester,
State of Massachusetts ss:

On this 24TH day of August, 2000, before me a Notary Public in and for the County and State aforesaid, personally appeared Charles A. Vacanti, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

(SEAL)

Jennifer M. Nadeau
Notary Public
My Commission Expires 1/31/2003

**JENNIFER M. NADEAU
NOTARY PUBLIC
MY COMMISSION EXPIRES
JANUARY 31, 2003**

ASSIGNMENT

WHEREAS, I, Jennifer J. Marler, residing in Arlington, Massachusetts, have invented certain new and useful improvements in and to the subject matter of:

HYBRID TISSUES FOR TISSUE ENGINEERING

described in an application for United States Letters Patent filed on May 17, 2000 and accorded Application No. 09/572,786 which is a continuation of International Patent Application No. PCT/US98/24409 filed November 17, 1998 which is based on U. S. Provisional Patent Application No. 60/066,926 filed November 17, 1997;

AND, WHEREAS, Beth Israel -Deaconess Medical Center having a place of business at 169 Pilgrim Road, Boston, Massachusetts 02115 (hereinafter "ASSIGNEE"), is desirous of acquiring certain rights thereunder;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) or the equivalent thereof, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, my entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said improvements, said United States application, any other United States applications, including provisional, divisional, renewal, substitute, continuation, reexamination and reissue applications, based in whole or in part on said United States application or in whole or in part on said improvements, any foreign applications, including g international and regional applications, based in whole or in part on any of the aforesaid United States applications or in whole or in part on said improvements, and in and to any and all letters patent, including extensions thereof, of any country which have been or may be granted on any of the aforesaid applications or on said improvements or any parts thereof;

AND I hereby authorize and request my attorneys, Baker Botts L. L. P., whose address is The Warner, Suite 1300, 1299 Pennsylvania Avenue, N. W., Washington, D. C. 20004-2400, to insert hereon any further identification necessary or desirable for recordation of this document, including the filing date and application number of said application when known;

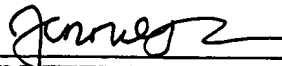
AND I hereby agree for myself and my heirs, executors and administrators to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to ASSIGNEE its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND I hereby covenant for myself and my legal representatives, and agree with said ASSIGNEE, its successors and assigns, that I have granted no right or license to make, use, sell or offer to sell said improvements, to anyone except said ASSIGNEE, that prior to the

execution of this deed, my right, title and interest in said improvements had not been otherwise encumbered, and that I have not and will not execute any instrument in conflict therewith;

AND I do hereby authorize and request the United States Commissioner for ~ Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said ASSIGNEE.

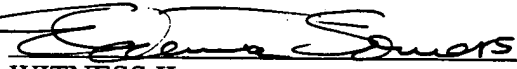
DATED: 10/07/01


JENNIFER J. MARLER

DATED: 10/07/01


WITNESS I
(Please print name) David Somers

DATED: 10/7/01


WITNESS II
(Please print name) "Winna" Somers
Edwina Somers